

调控通路内基因表达的相关性分析

李传星¹, 李霞^{1,2}, 郭政^{1,2}, 宫滨生¹, 屠康¹

1. 哈尔滨医科大学医学数学与生物医学工程学教研室/生物信息学研究室, 哈尔滨 150086; 2. 哈尔滨基太生物芯片开发有限责任公司, 哈尔滨150086 1. Department of Medical Mathematics and Biomedical Engineering/Department of Bioinformatics, Harbin Medical University, Harbin 150086, China; 2. HARBIN GENE-TECH BIOCHIP DEVELOPMENT INC., LTD., Harbin 150086, China

收稿日期 修回日期 网络版发布日期 接受日期

摘要 本研究从基因表达调控通路的角度分析了基因功能与基因表达之间的关系, 利用7套酿酒酵母基因芯片表达谱数据和通路数据库 (KEGG和CYGD) 所提供的信息, 应用我们研制的Genehub软件分析研究了同一基因表达调控通路内的基因在mRNA表达水平上的相关性, 共涉及16条通路, 495个基因。通过Pearson相关系数和Spearman相关系数两种相似性测度的分析, 我们发现94% (15条) 的基因表达调控通路内的基因在大于等于4套的表达谱数据中是共表达的, 以上结果从基因表达调控通路的角度, 证实了基因功能与基因表达之间存在着一定的相关性。

关键词 [调控通路](#) [基因芯片](#) [相似性测度](#) [酿酒酵母](#)

分类号

Analysis of the mRNA expression similarity of genes in the same gene expression regulatory pathway

LI Chuan-Xing¹, LI Xia^{1, 2}, GUO Zheng^{1, 2}, GONG Bing-Sheng¹, TU Kang¹

Abstract

In this work we analysed the relationship of gene expression from the point of view of gene expression regulatory pathway. Using seven sets of *Saccharomyces cerevisiae* gene chip expression profile data, and information from two pathway database (KEGG and CYGD), we analysed the mRNA expression similarity of genes in the same gene expression regulatory pathway by Genehub software, that involved totally 16 pathways with more than 495 genes. From the calculation of two different similarity measures—Pearson correlation coefficient and Spearman correlation coefficient, we found that about 94 percent of gene expression regulatory pathways are correlatively expressed in more than 4 (including 4) sets of expression profile data, and it presents additional evidence for the correlation between gene function and its expression in the view of gene expression regulatory pathways.

Key words [regulatory pathway](#) [similarity measure](#) [Saccharomyces cerevisiae](#) [gene chip](#)

DOI:

通讯作者

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(0KB\)](#)
- ▶ [HTML全文\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)

相关文章

- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“调控通路”的 相关文章](#)
- ▶ [本文作者相关文章](#)

- [李传星](#)
- [李霞](#)
- [郭政](#)
- [宫滨生](#)
- [屠康](#)